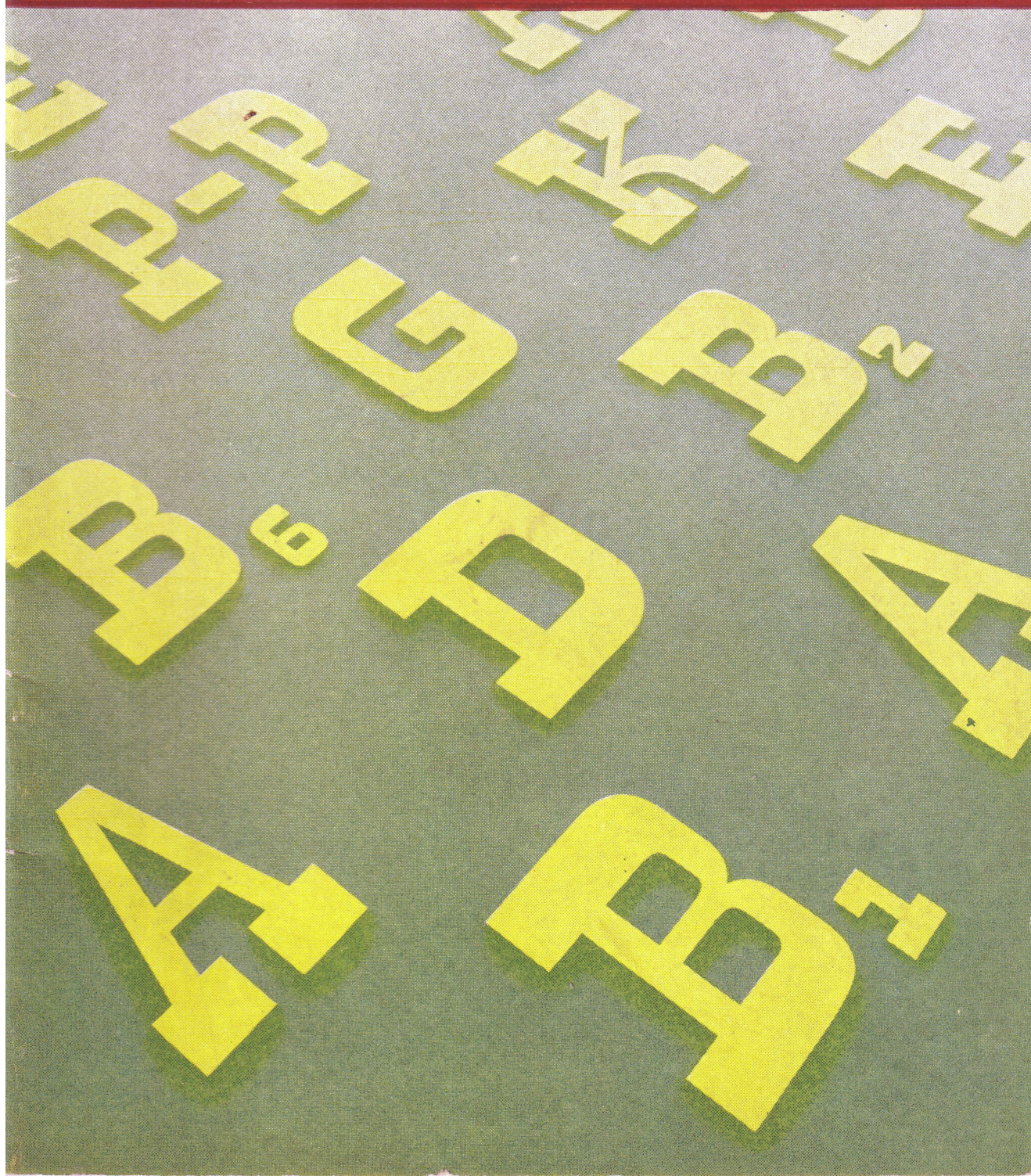


*what are*  
**VITAMINS?**









WHAT ARE  
*Vitamins*

BY E. C. BONAR, M. D.

A CLEAR AND SIMPLE EXPLANATION OF WHAT VITAMINS ARE—WHO SHOULD TAKE THEM, WHICH ONES AND HOW MUCH OF EACH . . . WHAT THEY MAY DO FOR YOU OR YOUR LOVED ONES.

*The health of the people is really the foundation upon which all their happiness, and all their powers as a State, depend.*

DISRAELI

*Vi-teens*  
by

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# *Vitamins*

## **ARE THE MOST ESSENTIAL PART OF FOODS**



In all our distant past, man has taken whatever foods were most convenient to his hand, with little regard to their nutritional value, or to their possible effect upon the health of himself or his loved ones. Every race and tribe have known if they took poisonous foods they sickened and often died. But, other than that, they have eaten whatever food has been most plentiful and easily obtained, without realizing that certain VITAL nutritional elements often were lacking in their diets.

Only in recent years have we begun to understand better the laws of nutrition.

You and I know of the development in the science of allergies. We now know that almost every individual suffers undesirable effects from partaking of certain particular foods which may agree with others but to which he is sensitive.



These things are of common knowledge. But until very recently only a few scientists realized the dire effects produced by our NOT partaking of sufficient amounts of certain vital and essential food elements. Now we know that many ailments are caused by nutritional or dietary deficiencies. Ailments which previously seemed to baffle efforts to diagnose or correct, now are responding to vitamin treatments.

The study of deficiency diseases is based on the theory that many harmful effects are produced because of the LACK of certain vital substances which a person fails to secure in their usual food and drink. We now know that MANY undesirable effects are produced by dietary deficiencies. Many of these deficiencies are those caused by a lack of the so-called vitamins. In a later paragraph I will discuss a few of the myriad ailments which may be produced by just a partial deficiency of one or more of the essential vitamins.

A common question is, "What are vitamins?." Briefly, we can describe them as being a group of chemical substances which occur in very small amounts in many foods, and which are necessary to health and life.

Probably the most important point for you to know is that while vitamins occur in many foods, they are present in INFINITELY small quantities in the foods which you and I and the rest of us generally eat. IT IS BECAUSE OF THIS SCARCITY OF VITAMINS IN THE PREPARED AND COOKED FOODS WE EAT, COMBINED WITH THE PREVALENCE OF LIMITED DIETS WHICH NEARLY ALL OF US FOLLOW, THAT MANY OF US SECURE A LESSER AMOUNT OF VITAMINS THAN IS REQUIRED FOR THE BEST OF HEALTH. Consequently, the health of many individuals has been improved by the addition of prepared vitamins to their usual diet.



The following may be other questions which are in your mind. "Do I need additional vitamins?" "Will vitamins relieve ME of this or that distress?" "Will they improve MY general health and make ME feel better?" "Will they add to MY vitality and energy and MY enjoyment of life?" If you have children you are wondering whether vitamins may aid their growth and development.

Also, you are wondering how you can recognize vitamin deficiencies, in yourself, or in your loved ones. If you have a deficiency, you are wondering how much better you would feel if that lack were remedied; and you would like to know what particular vitamins you should take, how much of each of them and how often. In the following few pages I am going to try to answer those questions for you as completely as possible, with the knowledge we have today.

I want to first point out that any sincere writer in the vitamin field, today, approaches this subject with a great deal of humility, as there are many things about vitamins which

science does not know. There are some things I can tell you with assurance. There are many more things I can tell you about, which I believe later will be recognized as facts, though yet only partially proved. Besides these, there are many beliefs about vitamins, some of which may later be found to be true, or partially true. Some of them will undoubtedly be found to be erroneous. Further, there are undoubtedly many facts about vitamins which have not even been guessed as yet.





I am going to try to tell you practical answers to the questions in your mind about vitamins, without using technical language.

## **VITAMINS MAY MEAN** *Life or Death*

If it were arranged for ALL vitamins to be TOTALLY lacking from our diets, for an extended period of time, serious illnesses would result, probably early death. This is true not only for humans but for all animals and plants and every growing thing.

One well may wonder how it is possible for such infinitely small particles of food stuffs to affect health and life so greatly. The best information on this subject, now available, indicates that the importance of vitamins in a person's or an animal's food, is the good effect they have on improving the ASSIMILATION and UTILIZATION of other foods which the body requires for the maintenance of health. When a sufficient amount of vitamins is consumed regularly, the other food elements, such as proteins, fats, starches, minerals, etc., are more fully and better utilized by the body, through improved assimilation of these foods by the blood stream from the intestinal tract and their transportation by the blood to all parts of the body.

As yet, we do not know exactly how these vitamins act in the body. BUT WE DO KNOW THAT THESE VITAL CHEMICALS ARE ABSOLUTELY ESSENTIAL IN THE BODY PROCESSES. By that I mean the process by which our bodies utilize the foods we eat, and transform them into nourishment for our many different organs and nerves and muscles. We know that even a PARTIAL lack of one essential vitamin may permit



seemingly strange ailments to develop or prevent a person from enjoying the good health he might have if a very tiny amount of that chemical were added to his diet. But generally, if one vitamin is lacking for an individual, OTHERS ALSO ARE DEFICIENT.

## *Vitamins Lacking*

### **FOR BOTH RICH AND POOR**

Many individuals, both rich and poor, follow occupations which provide little or almost no physical exercise. Such total lack of exercise is foreign to the mode of life to which all others in the animal kingdom are accustomed. Very light exercise, or an almost total lack of it, year after year, produces certain changes in the body's process. One of the important changes may be the lessening of appetite and a decrease in the food intake. It is possible that such a relatively inactive person would not secure sufficient vitamins from such a light diet.

If, in addition, he is a brain worker, as so many Americans are, the maintenance of his nervous system at top efficiency may require more of certain of the vitamins than he would secure from his usual diet.

There are probably many millions of individuals who fall into the above categories.

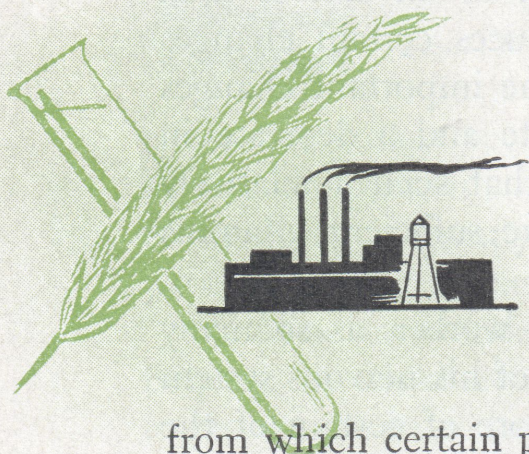
On the other hand, individuals who are especially active, doing hard work or physical exercise, require more of certain other of the vitamins, than the person of very inactive habits. Ordinarily, the active person is prompted by a keen appetite to eat more food and frequently takes a wider range of foods. If





they follow a balanced diet they may secure sufficient vitamins from their ordinary food. But if they have allergies or digestive troubles which cause them to limit their diets then they, too, may be lacking in vitamins.

Again, it is very probable that some individuals require much larger amounts of vitamins than do other individuals. This is an important fact to bear in mind. It furnishes one explanation of why it is so difficult, or impossible, to determine what quantity of vitamins is necessary for any particular individual to have, in order to enjoy the best possible health. Trying dosages of different potencies is probably the best method of finding an answer to that question.



## *Food Processing*

### **MAY LOSE VITAMINS**

Laboratory experiments, some years ago, indicated that the feeding of rats with processed food, food from which certain parts had been removed, resulted in their death. It was discovered that by returning these discarded substances to the processed food and feeding it to other rats, such other rats thrived.

To please popular taste many foods now are processed or manufactured. In many cases the richest vitamin-bearing parts of the food are discarded. White flour is one outstanding example.

Some years ago the foods eaten by the American people were largely home grown and home processed,



and the ground in which these foods were grown had not been depleted of its nutritive properties. Today, the soil may contain less of these elements and the method of processing and manufacturing may remove many more.

Again, while foods are being cooked much of the vitamin content may be destroyed by heat. Further, by their going into solution in the hot cooking water, a large part of the four important B vitamins may be discarded.

## **SIGNS OF** *Vitamin Deficiencies*

A person well may ask, "How can I tell if I have a vitamin deficiency?"

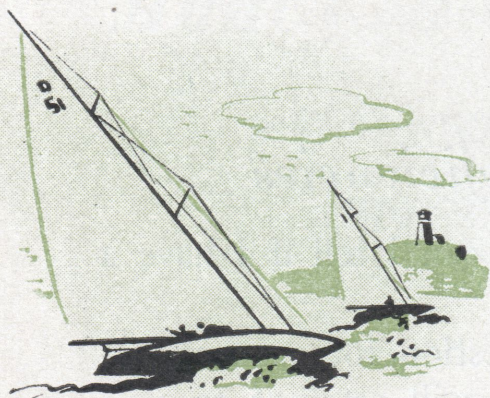
That is often a difficult question for even an experienced doctor to answer. I will attempt to give some of the more common symptoms which are believed to indicate the possibility of a vitamin deficiency. But it should be remembered that these same symptoms may spring from other causes, from which vitamins would bring no relief. Also remember that vitamin deficiencies may cause **MANY** other ailments in addition to those mentioned here. Further, that apparently healthy persons, free from any particular ailment, may, nevertheless, feel better and think better and have more pep and ambition and be less easily irritated when regularly taking prepared vitamins.

One of the **BEST** ways to determine whether you have a vitamin deficiency is to take a multiple vitamin preparation, containing a high potency of all the vitamins now believed to be essential or beneficial, for two to four weeks. If your health improves, then you probably need to take vitamins **CONTINU-**



OUSLY, as a supplement to your regular diet. This is a method many doctors advise.

Sometimes the improvement in health is quite marked and quite rapid. In other cases, the improvement may be so gradual as to be barely noticeable for the first month or so. But, if vitamins are benefiting you and then are discontinued abruptly, after such a test for thirty days, their cessation should bring a plainly evident reaction, which you easily can recog-



nize. After starting such a test, some persons may clearly see results in less than a week, while others may require two or three months. If you wish to determine quickly what results you can secure from vitamins, or to secure benefits in the shortest time,

you can do this by taking larger dosages, or by using multiple vitamin tablets having extra high potencies.

### Health Chart

In order to help you check the state of your health may I suggest that you ask yourself the following questions:

Toward the end of the day do you have that "tired out feeling," either physical or mental, or both?

Do you get nervous doing your ordinary everyday work?

Do you have more or less trouble with your digestion, either in the stomach or in the intestines?

Are you troubled with constipation or diarrhea?

Do you have any ailment or distress in the digestive tract which has not yielded to treatment?

Do you have a keen appetite for every meal, or



do you frequently have little, or no appetite for the food you have to eat?

Are you troubled at night with restlessness, dreams or insomnia?

Are you a victim of repeated colds, and infections or inflammation of the head or throat?

Do you have headaches? Do you sometimes have vague pains in parts of your body, your legs, arms, back or neck, for which you can see no good reason?

Are your fingernails brittle or difficult to keep nice appearing?

Do you feel that other members of your family, or friends, are selfish or inconsiderate of you, or are mean to you?

Are you ever despondent, moody or easily irritated?

One of the very helpful effects produced by vitamins, especially Pyridoxine ( $B_6$ ), is the lessened tendency to become irritated. Many persons who seem to be easily irritated really may be of good disposition, but may be suffering from a vitamin deficiency.

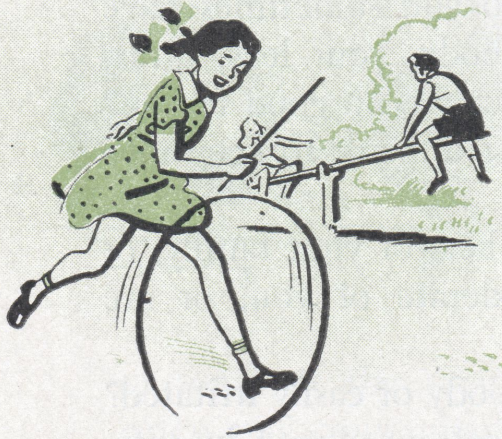
Are you usually happy? We believe that you will agree that fine health is the greatest single contribution to happiness. The completely healthy person is nearly always happy, in spite of any reverses or any misfortunes that may befall him. A partial vitamin deficiency may be causing you to live in a state of health below that which you could have, robbing you of the amount of happiness and joy in life which might be yours.

Is your income as much as you would like it to be?

This may sound like a far-fetched claim for vitamins, but I do not believe it is. Most persons are not at top efficiency, nor do they generally have the energy and urge to do the maximum amount of work of which they are capable, if they have a vitamin deficiency. It does not matter whether your income is \$40 a month



or \$40 a day, if you have even a partial deficiency of one essential vitamin it will pay you, in the matter of dollars and cents, to remedy that deficiency. Only a little increase in your earning power should repay you many times over for the cost of vitamins.



## *Who Should*

### **TAKE VITAMINS**

Of course, the consideration of growing children comes first. During the years of growth, a sufficiency

of vitamins is of especial importance. Four of the identified vitamins, A, B<sub>1</sub>, B<sub>2</sub> and C, are known to be essential for growth, or to promote growth. Vitamin D also is absolutely essential for children, to help prevent rickets and to aid in the formation of teeth and in the formation of all bones of the body. It is important to realize that a deficiency in any of these vitamins, during childhood, may have PERMANENT effects.

It has been the general knowledge and feeling of parents that if they gave their children "enough to eat" their responsibilities were fully discharged. It is now recognized that this is not necessarily a fact. Scientists say that a child may languish with a full stomach, if totally lacking in some of the essential vitamins.

Quality of diet is of greater value than quantity alone. It is much better for a child's diet to have a sufficiency of vitamins, even if not quite enough in total amount of food, than to have ample food and be lacking in these vital elements.



# *Adults Also*

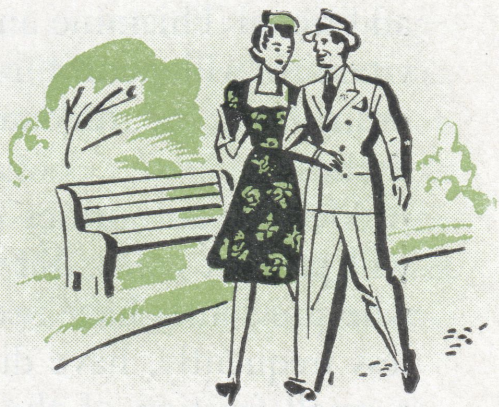
## **NEED VITAMINS**

"Life begins at forty" can be demonstrated more easily if the individual has a sufficiency of all the essential vitamins at this age. After we have passed this milestone it seems that vitamins are more likely to be deficient in the diets of an ever increasing percentage of us. And the older a person is the more apt he is to feel improved by taking vitamins, I believe.

There are two things which handicap nearly all of us, especially after we have passed the peak of our physical prime, though it also is true, to a lesser extent, with younger individuals. These are fatigue and nervousness or irritation.

Thousands of men, in mid-life or passed, are now taking vitamin preparations because they have discovered that, though they felt reasonably strong and healthy, they tired too quickly at work or when indulging in their favorite sport or athletics. This means a lot to us oldsters. Whether it permits us to do more work or to indulge in more social or athletic activity, it means our lives may be more successful and happier. Persons who enjoy athletic sports find they are much less fatigued and find that they have not tired as quickly, as they used to. For example, persons who enjoy a little dancing after dinner, but lack the energy to dress and go out, often find vitamins overcoming this in large measure. Golf pros tell us that many of their members who frequently stopped at 9 holes before, now are playing 18 holes.

Further, it is very probable that the intake of





additional Thiamine and Pyridoxine and the other B vitamins will permit better nerve and muscular co-ordination, the fundamental of success in sport activities.

Medical authorities differ as to whether vitamins will prevent colds. Yet it appears that many persons, who previously have been affected with colds more or less frequently, have discovered that they suffer only a small fraction of the number of days of ill health from colds, after they have been on a full vitamin diet for a period of time. This alone makes them worth their cost. It is probable that vitamins WILL AID YOUR RESISTANCE to certain types of colds, if you do not abuse yourself by over-fatigue or exposure. From the practical viewpoint it would seem that individuals, who have built up buoyant health through increased vitamin intake, should have much more resistance to colds, and probably to many other ailments, than a person whose state of health is below par, due to a partial vitamin deficiency.

## *Partial Deficiencies*

### **MAY BE HIGHLY DETRIMENTAL**

It is necessary to recognize that there are many degrees of vitamin deficiencies. For example, a marked or total deficiency in Thiamine, Vitamin B<sub>1</sub>, may cause a painful inflammation of many nerves at once. It is believed that a daily intake of about 1 milligram of Thiamine will help prevent such polyneuritis. But it also is believed that the best of health demands more than 1 milligram of Thiamine; a consensus of medical opinion seeming to be that the average person should have at least 3 milligrams of Vitamin B<sub>1</sub> daily. Many



individuals may be, and probably are, benefited by taking even more. This benefit is not confined to avoiding neuritis. Thiamine is a "pepper-upper." It is definitely helpful in avoiding fatigue, both muscular and nervous fatigue.

Many experiments have been conducted on laboratory animals in which varying degrees of vitamin deficiencies have been produced by controlled diets. These experiments have indicated that a reasonable degree of health can be maintained by a rather low vitamin intake, but that a BETTER state of health, growth and spirits are maintained and longer life occurs, when an adequate supply of vitamins are furnished such animals. There are excellent reasons to believe that the same is true of humans and several experiments have confirmed this belief.

#### **VITAMINS MAY PRODUCE**

### *Longer Life*

It is highly interesting to learn of the effects of vitamins on a life span. Experiments conducted on lab-

oratory animals have proved that an adequacy of all essential vitamins, sufficient to maintain buoyant health, considerably increases their life span. Also, their good health tends to be maintained until a later period in life.

Since the discoveries of vitamin therapy have been made, time has not permitted experiments with humans to determine whether their life span can be increased. But there are good reasons to believe that such may be found to be the case for many persons. It is logical that, if an individual has a sufficiency of





vitamins, beginning in childhood and continuing through life, the functioning of the body will be maintained at a higher level and the internal organs will not deteriorate as rapidly. Thus, there should be produced a longer life, a healthier life and a more successful life. This is what we all would like for ourselves, and that which we would like to provide for our children.

## *Do Healthy Persons*

### **NEED VITAMINS?**

Yes, just the same as they need adequate foods.

This is one of the strange and very valuable attributes of vitamins. They can make a healthy person feel better.

Why this is I do not know. I have heard theories concerning it and I have one of my own, but none of these theories are any more than guesses. But experiments indicate that the fact is true for many strong and healthy individuals.

It should be understood that, while a total lack of one or more of the essential vitamins leads to serious illness, a partial lack may create a condition which may not be recognized as an ailment, **YET SUCH IT IS.** Individuals may believe that they are as healthy as it is possible for them to be, yet if they do have a partial lack of the necessary vitamins their general well being, including both their nervous and physical health, might be improved to their greater enjoyment and profit. They might get more happiness out of life and probably their capacity for profitable work could





be increased, if their diets were supplemented by the addition of a sufficiency of the essential vitamins.

## *What Vitamins* **MAY DO FOR YOU . . . .** **AND** *How Much* **YOU MAY TAKE OF EACH**

Many persons wonder just what vitamins may do for them. They hear about Vitamin B<sub>1</sub> and D and others and wonder what function each performs. I will try to tell you, briefly, the scientific facts now known.

### **Vitamin A**

Vitamin A promotes growth, thus making it essential for children. It aids in establishing resistance to inflammation in surfaces of the breathing tract. Consequently, it probably helps prevent certain types of colds. It aids in maintaining good vision and adaptability to semi-darkness. Thus, it may help to improve vision when driving under difficult light conditions. It is necessary for the good formation of teeth. It occurs in leafy green vegetables and in small amounts in dairy products. Its chief source medicinally is fish liver oils.

**Vitamin A—Adult Dosage.** Government findings (for minimum daily adult requirements), 4,000 U.S.P. units. Many of us believe that the average adult person should have from 6,000 to 8,000 U.S.P. units per day. Some individuals may require as high as 20,000 units daily, but these are exceptional. At the present writing, governmental rulings forbid making



potencies of A higher than 5,000 units per day, in multiple vitamin preparations. An easy method of rationing.

### **Vitamin D**

Vitamin D is considered a companion to A, occurring almost exclusively in fish liver oils and dairy products. It is absolutely essential for growing children as it helps prevent rickets, which is evidenced by a softening and lack of development of the bony structures of the body. It is very important in both the formation and maintenance of teeth. Both CHILDREN AND ADULTS need it for this purpose. A lack of Vitamin D in babyhood often can be recognized in adult life by bow legs, poor teeth and other faulty bone structures.

**Vitamin D—Adult Dosage.** Government findings, minimum of 400 U.S.P. units daily. Other than the few dwellers in dry or desert climates who receive ample sunshine, most persons probably would be benefited by taking upwards of 500 or 600 U.S.P. units daily, which amount is proper and safe.

### **Vitamin "B Complex"**

The vitamin originally called B has since been found to be a combination of several vitamins. It contains fifteen or more different factors, most of which now have been identified and five are now being manufactured and widely used in vitamin tablets. Four of these five are believed to be highly valuable to humans. In addition there are other factors, which have now been isolated and identified, ten of which now are commonly grouped under the name of "B Complex." It seems to be the general medical opinion, at this date, that these other factors are sufficient in the



usual diet. Consequently, I do not believe that this so-called B Complex is necessary as a dietary supplement; in fact, to many persons it seems to be disturbing.

### **Thiamine, Vitamin B<sub>1</sub>**

Thiamine, commonly called B<sub>1</sub>, was one of the first vitamins to be isolated and identified. Before it was isolated it had been recognized as a cure for the deficiency disease beri-beri.

Thiamine is ESSENTIAL FOR EVERYONE. Besides promoting growth in children, it is necessary for good nerve functioning in the adult. It maintains the appetite and normal intestinal functions. It is particularly essential for nursing and expectant mothers.

**Vitamin B<sub>1</sub>—Adult Dosage.** Government findings, minimum of 1 milligram per day. I believe that most other doctors are in agreement with me in feeling that Thiamine is one of the most important supplements to diets. Probably the average individual will be benefited by taking at least 3 milligrams per day. And it is probable that many individuals may receive additional benefit by taking 5 to 10 milligrams per day, as a supplement to their usual diet.

### **Riboflavin, Vitamin B<sub>2</sub>**

Riboflavin, earlier named Vitamin G, is commonly known as B<sub>2</sub>. It, also, promotes growth and helps prevent certain abnormal changes in eyes which result in poor vision. It helps prevent certain kinds of sores on lips and face, and cracks in corners of the mouth.

**Vitamin B<sub>2</sub>—Adult Dosage.** Government findings, 2 milligrams per day, minimum.



## Nicotinic Acid

Nicotinic Acid, or the Nicotinamide, now renamed NIACINAMIDE, has not been given a "B" number but is one of the same group. It is used as both a cure and a preventive for pellagra, which affects the skin, alimentary tract and nervous system. If its deficiency is long continued it may cause insanity. It prevents a similar disease in dogs.

**Niacin—Adult Dosage.** No government findings published to date. Consensus of opinion among doctors seems to indicate 10 to 30 milligrams per day; some individuals might be benefited by more.

## Pyridoxine, Vitamin B<sub>6</sub>

Pyridoxine is much more important, I believe, than was formerly recognized, although its exact role in human nutrition has not yet been established. Possibly its deficiency induces certain muscular disorders. An inadequate supply causes anemia in dogs. Pyridoxine is now considered by many doctors as having a highly important function affecting the nervous system. I believe it is particularly valuable for the high-strung nervous type of individuals in helping to make their nervous reactions quieter and more normal. Some high-strung persons have received immense benefits by increasing their Pyridoxine intake to 2 milligrams or more per day. Its exceptionally high cost possibly has retarded its wider and larger usage in multiple vitamin preparations.

**Vitamin B<sub>6</sub>—Adult Dosage.** The government has not yet publicly recognized its need in human nutrition. Insufficient clinical data have been accumulated to show what the optimum dosage may be. Some observed results indicate that, in general, the amount of



Pyridoxine taken should bear a certain relationship to the amount of Thiamine and other vitamins which are being taken. Personally, I believe the amount of Pyridoxine should be not less than 25% of the amount of Thiamine and need not be more than 50% of the Thiamine taken daily.

### **Anti-Gray Hair Factors**

Besides these four members, just mentioned, of the B family, we now know that it also contains other members, some of which have been identified as Pantothenic Acid, para-Aminobenzoic Acid, Inositol, Biotin, Choline, Folic Acid, Guanine, Adenine, Xanthine and Uracil.

The first three mentioned have been found to have some effect upon hair color of laboratory animals and in some cases on humans.

Nearly all of these ten factors of the B Complex are very prevalent in foods and I believe that they are rarely deficient in the average American diet. Consequently, I do not believe that there is any need for them to be added as a dietary supplement.

Quite a bit has been written in recent months about the possibility of hair color restoration by vitamins. Some few clinical experiments have been made on humans by giving them dosages of upwards of 10 milligrams of Calcium Pantothenate. A

number of these individuals have had the color of their hair affected while many others have not. But I am not sure that the change in hair color has been





desirable in all cases. To my knowledge, none of these experiments has completely restored the previous hair color.

For reasons a little too complicated to attempt to give briefly, I am now of the opinion that these anti-gray hair factors should not be taken in connection with other vitamins.

## **Vitamin C**

Vitamin C, the anti-scurvy vitamin, also is called Ascorbic or Cevitamic Acid. It is present in sizable quantities in many fruits and vegetables, with particularly large amounts in oranges, grapefruit, limes, lemons and tomatoes. It also is found in fresh strawberries, raw cabbage, green peppers and most other fresh fruits and vegetables, including potatoes. Because it occurs in relatively large amounts in so many foods, it now is thought that the number of persons lacking Vitamin C is far less than the number who lack the other vitamins.

If a Vitamin C deficiency does exist it should be corrected, for both children and adults. It is essential for growth in children. A deficiency in adults may have an undesirable reaction on the nervous system and body processes. Among other things, it appears that such a deficiency may sometimes contribute to insomnia, which may be relieved by taking generous dosages of Vitamin C. It seems to be particularly helpful in relieving insomnia caused by an irritated digestive tract.

Many individuals insure against a shortage of Vitamin C by taking two to six ounces daily of orange or other citrus fruit juices, or tomato juice.

**Dosage.** Government findings for minimum daily adult dosage of Vitamin C is 30 milligrams. Many



other doctors believe with me that a daily dosage of 50 or more milligrams is better.

### **Vitamins Recommended as a Dietary Supplement**

Because some of the important B vitamins are present in such infinitely small quantities in our common foods, there seems to be a deficiency of B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub> and Niacin, as well as the A and D, in the diets of a large percentage of American families.

Therefore, THESE FOUR B AND THE A, C AND D VITAMINS are the ones which, if added in SUFFICIENT amounts to the usual food in your diet, are most likely to assure you an adequate supply of essential vitamins and to assist in guarding you against vitamin deficiencies.

### **Important**

Vitamins should be taken in split doses. The daily amount, if taken in only one dose, apparently does not furnish nearly as good effects as if this amount is divided into either two or three tablets, to be taken with meals. The B vitamins are not stored in the body to any degree, but are used up or excreted in a few hours, much like food.

### **Scale of Weights**

As drugs go, vitamin chemicals are exceptionally potent. A few ounces of each of the essential vitamins would last you a lifetime. Consequently, dosages need to be measured in very small units of weight, to which many of us are strangers.

A common unit of measure is the milligram, which is only one sixty-fifth ( $1/65$ ) of a grain, or about one twenty-eight-thousandths ( $1/28,000$ ) of an ounce. The microgram (sometimes called gamma) is



one one-thousandth ( $1/1,000$ ) of a milligram, or one twenty-eight-millionths ( $1/28,000,000$ ) of an ounce.

## *The Amount*

### **OF VITAMIN DOSAGES IS HIGHLY IMPORTANT**

In fact, this is THE BASIC FUNDAMENTAL OF VITAMIN THERAPY.

If we stop to consider for a moment that vitamins are found in many foods, we will realize that nearly everyone secures some vitamins. Your deficiency, if you have one, is accurately described as being a partial deficiency. In other words, you may not get a LARGE enough amount of vitamins from your foods. If you attempt to correct such partial deficiency by taking a vitamin preparation which still furnishes you too small an amount of the several essential vitamins, then YOU MAY STILL HAVE A PARTIAL DEFICIENCY OF VITAMINS and may not be able to notice much, if any, improvement in your well-being.

Likewise, if you take only B<sub>1</sub>, or only vitamins A and D, or some preparation which furnishes only three or four of the six important vitamins now recognized as being necessary, you may still have a vitamin deficiency. It is now known that a vitamin deficiency is rarely of a single vitamin, it is nearly always multiple. So-called B Complex preparations from natural sources are frequently lacking in a sufficiency of some of the important B vitamins. The B Complex is particularly apt to be insufficient in Pyridoxine, B<sub>6</sub>, a very helpful (and very expensive) vitamin. Such preparations are also generally without any A or D or C vitamins.



If you really want to discover what benefits prepared vitamins may bring you, you should take a preparation which furnishes a high potency—preferably a high potency of ALL seven vitamins now believed to be lacking in most diets and to be essential, or highly desirable, for the maintenance of the best of health. If you discuss this matter with your druggist, let me advise that you suggest that you would like a preparation of EXTRA HIGH POTENCY. You can then expect results within a reasonably short time, if you have a vitamin deficiency.

Because of the high cost of manufacturing these complex chemicals many of the lower priced vitamin preparations have very weak dosages and many do not contain all of the essential and desirable vitamins.

Infant and small children dosages should be about one-quarter to one-half that of adult dosages. Larger children can well take adult dosages. Both expectant and nursing mothers generally should have larger amounts than other adults, about a 50% increase.

It may also be borne in mind that large overdosages of A and C and the four recommended B vitamins can be taken safely. Extremely large doses are given, under the direction of a physician, for the cure of marked deficiencies.

Many doctors believe that individuals may vary widely in their vitamin requirements, that some persons may need to take regularly two or three times the amount of vitamins, as a supplement to their diet, which are sufficient for others. In taking vitamins you may remember that high potencies will do no harm;





for certain individuals, particularly brain workers, they may produce a much greater improvement in health.

## Minerals

Many persons may wonder whether, if they have a vitamin deficiency, they should also take more minerals. I do not believe this is true in general.

It is recognized that vitamins INCREASE THE ASSIMILATION of the minerals which are widely prevalent in foods. If you are getting sufficient vitamins, either from your food or from vitamin preparations you are taking, it is probable that you do not need to take additional minerals, beside the amount secured from your foods. I concur with the thought of many doctors that additional minerals should not be taken unless that particular person has had a medical diagnosis and prescription for such.



## *Synthetic Vitamins*

### **ARE NOT FATTENING**

Fortunately, synthetic and prepared vitamins seem just as beneficial as the vitamins occurring in natural

foods. The fact that they are prepared in a laboratory has certain advantages, in that their potency is definitely known and they can be prescribed and taken in sufficient quantities to maintain the best of health.

If it were possible to secure all the vitamins you need from your regular food, that would be the



easiest way to do it. The fact is, we all resist changes in our dietary habits, generally for excellent reasons. Your selection of food is probably based on what you like best or to avoid foods which produce undesirable results, such as overweight or digestive difficulties. The average person will not eat food that does not appeal to individual taste, regardless of its nutritional value or health benefit.

One of the large drawbacks in trying to secure adequate vitamins from our food is that many of us might need to eat increased amounts of many fattening foods. Such increased consumption probably would add weight to those persons who put on weight easily. It is comforting to know that by taking synthetic vitamins, these individuals may secure adequate vitamins without adding weight. Individuals who are inclined to eat more than they want themselves to eat, may find that while vitamins help to keep a good appetite and enjoyment of good food, they are satisfied after eating less than when their vitamin intake was insufficient. Much overeating is thought to be due to an unsatisfied, instinctive longing for vitamins. Thus it will be seen that while vitamins help to produce growth in children, they should not produce added weight nor fat for adults, except for persons who are skinny or abnormally underweight because of a marked vitamin deficiency. This may relieve the minds of some men and women to know that synthetic vitamins are not fattening.





# *Time Requirement*

## **FOR VITAMIN BENEFITS**

It should be realized that when a long standing vitamin deficiency exists, the taking of vitamins one day will not make a person feel better the next day. When a vitamin deficiency is made up, a change occurs gradually in the blood stream, because it then may assimilate better food values from the digestive tract. The different muscles, organs and nerves then may begin to improve from the effect of the improved blood. After these parts are improved they will begin to function better, at which time you may be able to notice real signs of improved health. You may not tire so easily. Your nerves may be more quiet and less easily irritated. Sleep may improve. Chronic constipation may be lessened as the intestinal tract functions better. Vision may improve. The occurrence of colds may be decreased. Some types of headaches may be lessened greatly. Fingernails may not break so easily. Many types of ailments may be lessened or relieved. You may be healthier and happier and more efficient and be of more profit to yourself, or to your employer which soon may mean more pay for yourself.

But it requires a few days to a few weeks for these gradual changes to become plainly noticeable. A person should not be too impatient in securing benefits. Remember, they are spread over the entire body and all its many parts and organs must improve before their "workings" can improve.

If all of the essential vitamins are taken regularly, the same as other food is taken regularly, these benefits may continue and increase for many months, possibly for years. Thereafter such improved health



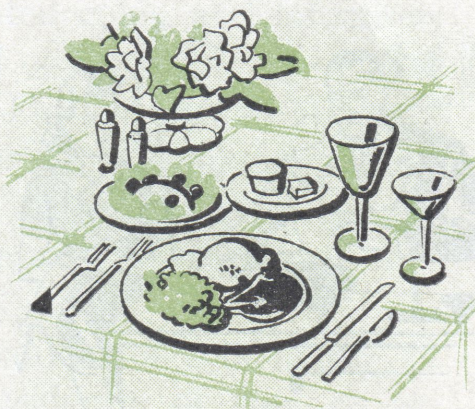
and happiness and efficiency may be easily maintained by adequate vitamins and a sufficient intake of proper food, if no disastrous conditions intervene.

## *Two Remedies*

### **FOR VITAMIN DEFICIENCIES**

Careful and detailed examinations now have been made to determine the vitamin content of all the common American food items. The comparison of these determinations with a large number of typical diets of American families indicates a partial vitamin deficiency for a rather large percentage of all persons.

There are two ways by which this situation may be remedied—either a change in your dietary habits, or the taking of prepared vitamins as a supplement to your diet. If a person can improve the food balance in their diet and eat sufficient quantities of the right combinations of foods, they might secure sufficient vitamins. This would depend upon the quality—I do not mean the price—but the quality from the vitamin standpoint, of the foods they could secure. What the quality of your foods may be after being prepared and cooked and served, in reference to their vitamin content, is a difficult question to determine.



## *Brain Workers*

Brain workers ordinarily get insufficient exercise; much less than the animal man would have if living under



primitive conditions, such as man lived in during the many centuries of his evolutionary development.

Consequently, their appetite and their food intake is usually much lower than it would be if that same



individual were engaged in hard physical labor. At the same time, it is very possible that his nervous system may require more of certain of the B vitamins, especially B<sub>1</sub> and B<sub>6</sub>, than if he were less active mentally. This produces a double effect. While more

of some of the vitamins are required, less food is eaten and, consequently, less of these vitamins, which apparently are very beneficial to the nervous system, are secured from diet. This situation may be further aggravated by the brain worker eating largely of manufactured and processed foods, from which much of their normal vitamin content has been taken. Thus, brain workers may seriously question whether they are getting sufficient vitamins from their food. I believe that the diet of most brain workers could be improved by the addition of a high potency multiple vitamin preparation.

## *In Conclusion*

These brief notes are not designed and should not be regarded as a medical treatise. And it must be remembered that the mere taking of vitamins will not relieve other than vitamin deficiency types of diseases, for either adults or infants. But for the great mass of



individuals, both those who are apparently healthy and especially those who feel poorly part of the time or more, the taking of prepared vitamins may bring a great improvement in their general health. It is estimated that every day there are six million persons ill in this country. Much of this enormous loss of man power might be avoided. This is of significance today when everybody wants to contribute their best to the war effort. The taking of prepared vitamins is especially recommended for all hand workers and all executives in the war industries, because of the increased energy and clearer thinking which vitamins may produce.

*E. C. Bonar, M. D.*



**DO YOU NEED VITAMINS?**

*Here is a*  
***Money Back Guarantee***

***which will give you an  
opportunity to find out!***

It seems that a very practical way of determining whether any particular person will be benefited by vitamins is for that individual to take a multiple vitamin tablet, which contains adequate dosage of all the vitamins now believed to be essential to humans and generally lacking in diets.

VI-TEENS have been formulated with the intention of supplying you with the finest vitamin preparation manufactured, in easy-to-take tablet form.

The Lanteen Medical Laboratories, Inc. would like to be able to give every interested individual a supply of VI-TEENS sufficient for a month's test, as a free sample. While it is not economically feasible for us to do this, we are willing and glad to be able to make the following guarantee for VI-TEENS:

If you will purchase them from your druggist and take them according to directions we believe you will



find that they will bring you an improvement in your health, if you have a vitamin deficiency. *If you are not entirely satisfied with the results that VI-TEENS produce for you, you may return the empty bottle and your druggist will refund your purchase price.*

This money-back guarantee is designed to give you an opportunity to determine, to your own satisfaction, the possible benefits that may result from the addition of prepared vitamins to your regular diet, or to the diet of your children or other loved ones, with the opportunity of recovering your purchase price if you feel that the person taking them has received no benefit from them.

This guarantee applies to you even if you have taken other vitamin preparations and were not satisfied with the results. If the potency (amount of vitamins) in these other preparations was too low for your requirements, you might have received little or no noticeable effects, even though you needed vitamins. But if you will take VI-TEENS SUPER POTENCY tablets for two weeks we believe you cannot help but notice a marked improvement in the way you feel. Ask your druggist about this simple, honest, money-back guarantee for VI-TEENS.

### **Two Potencies**

For your greater benefit two formulas are available, both of high potency. One is named VI-TEENS HIGH POTENCY and the other VI-TEENS SUPER POTENCY.

VI-TEENS HIGH POTENCY are multiple vitamin tablets containing six important vitamins, in what we believe is an exceptionally well balanced formula. In comparison with most other preparations you will find these to be a high potency formula; the amount of each vitamin equals, some of them exceed by three times, the recommended minimum daily adult require-



ment. The amount of none of the six vitamins is less than such daily requirement.

It appears to be the consensus of medical opinion that a multiple vitamin preparation containing dosages of the six vitamins as high as is furnished by VI-TEENS HIGH POTENCY is sufficient as a dietary supplement to maintain good health, for persons having only an average deficiency. Adult dosage, 2 tablets per day, one each with morning and evening meals. Infants and small children, 1 tablet per day, broken to split the dosage between morning and evening meals. Nursing or expectant mothers can well take 3 tablets or more per day. Double these suggested dosages may bring still larger benefits to individuals with a marked deficiency.

### **Super Potency Vi-teens**

To overcome a marked vitamin deficiency, it is common practice to prescribe a large overdosage of vitamins. Such prescription may specify ten times the dosage recommended for use as merely a dietary supplement. Such large dosages are capable of bringing a greatly increased rate of recovery to patients having a marked deficiency.

All of us are wondering how much vitamins would help us, or whether or not they would bring us any improvement in general health and well-being. Nearly every one has some little ailment. Many of us have one or more ailments that should not be classed as "little," because they are important in their sum total effect on our health, happiness and efficiency, and for which we would be more than glad to find relief.

With these thoughts in mind, our group of doctors have devised a multiple vitamin formula of *exceptionally* high potency, in comparison with the best of other preparations which are used as a dietary supplement.



This *super potency* has a dual purpose. It makes available a formula that will overcome a vitamin deficiency more quickly than any preparation containing just the minimum daily requirements of the important vitamins. If you want to find out whether or not you can be benefited by vitamins, this *super potency* is the preparation you should take, for at least two weeks or a month. If you should find no improvement after such period, we believe that you then can feel assured that your difficulty is not primarily a vitamin deficiency. But it seems that a very large percentage of all persons taking this formula do find, and quickly, that they are enjoying a real improvement. This improvement is a result of either overcoming some ailment or discomfort they have been suffering, or in feeling less fatigue, less nervous, or less irritable, or better in any one of many different ways. Thus, they become more profitable to themselves and to their employers, and enjoy life more fully.

VI-TEENS SUPER POTENCY were formulated with the idea of providing *ample* quantities of all of the seven important vitamins to supply any individual's requirements. Our recommended dosage is two tablets per day, one with breakfast and one with the last meal of the day. These two tablets daily supply up to EIGHT times the minimum daily requirement. That is one reason why VI-TEENS SUPER POTENCY tablets are widely considered the finest vitamin preparation manufactured today.

Besides helping you to overcome a vitamin deficiency more quickly, *a super potency tablet may bring larger health benefits to many individuals* than they have ever enjoyed before. This may seem like a startling statement, but whether you feel sick or well, we believe these Super Potency vitamin tablets will make you feel better.



Our simple plan with money-back guarantee makes it easy for you to determine whether you need additional vitamins and it is also easy to determine whether you will benefit more from the Super Potency preparation, or whether a good, well-balanced and economical multiple vitamin formula will be sufficient for you. Take the SUPER POTENCY preparation for at least two weeks or a month, preferably two months. When you find you are benefited you can feel sure that you should be taking additional vitamins. Then it is easy to find out whether your requirements are satisfied by a regular potency preparation, by decreasing your daily dosage from our Super Potency to our High Potency. Our money-back guarantee helps you make these discoveries. Remember, this guarantee applies to your VI-TEENS HIGH POTENCY or VI-TEENS SUPER, whichever you prefer to try, but we recommend that you take the VI-TEENS SUPER POTENCY to start.

Remember, every one should take their daily vitamins in split dosages, two or three times during the day with meals.

### **Quality Assured**

There is one thing in which you may feel assured when taking VI-TEENS. Every ingredient that enters these tablets is of the first quality available for that purpose. This is important for you to know, because the cost of the raw ingredients that enter into the manufacture of vitamin tablets is exceptionally high. For example, Pyridoxine, most expensive of any of the important vitamins, has a higher manufacturing cost today than twice its own weight in pure gold. Yet, you will notice that there is a relatively high Pyridoxine content in both of the VI-TEENS formulas, in comparison with many other multiple vitamin prep-



arations. This is because we believe that Pyridoxine has an especially important and desirable function, helping in quieting the nervous system.

In the *super potency* VI-TEENS formula especially, no expense has been spared to make available for your benefit what we believe to be the FINEST VITAMIN FORMULA. We believe it provides the maximum dosage of the vitamins it contains which any person need take as a dietary supplement.

### **Vitamins Economical Foods**

When you buy a package of a good multiple vitamin preparation at a drug store you may be inclined to feel that you are paying a high price for a small package. It is easy to overlook the fact that you are buying a supply for two weeks or a month or longer.

If you purchased a two-week's or month's supply of food at one time you would find considerable money involved. If you stop to think, you will realize that a dime or so a day does not buy much additional food, but will buy a sufficiency of essential vitamins which are often lacking in the American diet. Half such cost for small children. Such heavier vitamin intake may permit economies, in less essential foods, that will more than offset this small expenditure. Many of us spend more than that on non-essentials.

Vitamins may *seem* high priced, yet they are probably among the cheapest food values that can be purchased. The reason for this is simple. Vitamins *assist in the better assimilation of the other foods*, the proteins, the minerals, the carbohydrates and the fats, for which you spend your food money. Consequently, *better nourishment should be received from other foods when sufficient vitamins are taken.*

Naturally, care should be used in selecting a well



balanced diet, in order that properly proportioned food values for the body will be maintained. However, with the same or even smaller expenditure for food, better nutrition, often resulting in better health,

# *Vi-teens*

## **SUPER POTENCY 7 IMPORTANT VITAMINS**

**We believe this is the Finest  
Vitamin Formula manufactured.**



Small size—30 EXTRA high potency tablets, 15 day adult supply  
or one month's supply for a small child **\$3.50**

Standard size—60 tablets, a month's supply for an adult, or 2  
month's for a small child. **\$5.75**

Large size—125 tablets of this top ranking vitamin preparation  
**\$10.00**



is possible when sufficient vitamins are taken regularly. It appears that you will profit if at least a nickel or a dime of every food dollar is spent for vitamins.

# *Vi-teens*

## **SUPER POTENCY 7 IMPORTANT VITAMINS**

Two tablets daily supply the following percentages of minimum adult requirements:

Vitamin **B<sub>1</sub>** (Thiamine HCl)  
(2666 U.S.P. Units.....800%) 8 Milligrams

Vitamin **B<sub>2</sub>** (G)  
(Riboflavin.....200%) 4 Milligrams

**Niacinamide**  
(Nicotinamide).....30 Milligrams

**Pyridoxine (B<sub>6</sub>)**.....2 Milligrams  
(The need for Pyridoxine in human nutrition has not been established.)

Vitamin **C**  
(1200 U.S.P. Units.....200%) 60 Milligrams

Vitamin **A**.....(125%) 5000 U.S.P. Units  
(from fish liver oils)

Vitamin **D**.....(250%) 1000 U.S.P. Units  
(from activated Ergosterol)

Notice the vast difference in amounts of the several vitamins when you compare this with any other formula. (Remember, Vitamin A is now rationed; 5,000 units daily is maximum allowable.)

NOTE: 1 Ounce=28.35 Grams=437 Grains  
1 Grain=65 Milligrams  
1 Milligram=1,000 Micrograms (or gammas)



# *Vi-teens*

## HIGH POTENCY

### 6 IMPORTANT VITAMINS



Standard size—60 high potency tablets, a month's supply for an adult or two month's for a small child. **\$2.75**

The economical, family size—250 tablets. **\$9.00**



# *Vi-teens*

## **HIGH POTENCY 6 IMPORTANT VITAMINS**

Two tablets daily supply the following percentages of minimum adult requirements:

Vitamin **B<sub>1</sub>** (Thiamine HCl)  
(1000 U.S.P. Units.....300%) 3 Milligrams

Vitamin **B<sub>2</sub>** (**G**)  
(Riboflavin.....100%) 2 Milligrams

**Niacinamide**  
(Nicotinamide).....30 Milligrams

**Pyridoxine (B<sub>6</sub>)**.....1 Milligram  
(The need for Pyridoxine in human nutrition has not been established.)

Vitamin **A**.....(125%) 5000 U.S.P. Units  
(from fish liver oils)

Vitamin **D**.....(250%) 1000 U.S.P. Units  
(from activated Ergosterol)

Vitamin **C** is not included in this formula in the interests of economy for purchasers and because of its wide prevalence in foods.



*After you have read this clearly written  
booklet on vitamins, we will appreciate its  
return to us.*

**THANK YOU**

**LESIT PHARMACY  
6650 Frankford at Unruh  
Philadelphia, Penna.**